

What is claimed is:

- 1 A xDSL (Very high rate Digital Subscriber Line) modem having a DFE (Decision Feedback Equalizer), comprising a null compensator for finding a null frequency generated on a transfer function of a receiving signal before the DFE by predicting and tracing the null frequency to enlarge a signal component of the null frequency.
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2. The xDSL according to claim 1, wherein the null compensator comprises:
 - a null compensating filter for enlarging the signal component corresponding to the null frequency on the transfer function of the receiving signal; and
 - 10 a null tracer for tracing the null frequency using minimum point of a average power or a output energy of the null compensating filter.
3. The xDSL according to claim 2, wherein the null compensating filter has a transfer function with an inverse characteristic to a notch filter having a transfer function characteristic with a notch type.
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4. The xDSL according to claim 2, wherein the null tracer predicts and traces the null frequency with a RPE (Recursive Prediction Error) algorithm and a Gauss-Newton method.
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